Express Mail Label No. EL948454521US
Date of Deposit: July 11, 2003

Attorney Docket No. 24250-506

APPLICATION

FOR

UNITED STATES LETTERS PATENT

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

Be it known that **Gary Duclos** have an invention entitled **SHOE CONSTRUCTION** of which the following description in connection with the accompanying figures is a specification.

TITLE OF THE INVENTION

Shoe Construction

CROSS REFERENCE TO RELATED APPLICATIONS

Benefit is claimed under 35 U.S.C. §119(e) of prior U.S. provisional application no. 60/222,172 filed August 1, 2000, the disclosure of which is incorporated herein by reference.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

N/A

BACKGROUND OF THE INVENTION

In certain shoe designs, a midsole formed from a lightweight material is provided above the outer sole to provide additional cushioning and comfort for the wearer. Often, the midsole is left exposed on the outside. See Fig. 10. It would be desirable to provide a covering for the midsole.

SUMMARY OF THE INVENTION

The present invention provides a shoe construction having a midsole wrapper with a pleasing appearance that does not result in large ridges or bulky wrinkles. More particularly, the present shoe includes a midsole covering an outsole, and an external wrapper covering an outer surface of the midsole along at least a portion of a perimeter of the shoe. The shoe also includes an upper

assembly forming an external upper surface of the shoe. A wrapper locator abuts an inner surface of the external wrapper and includes an upper edge region extending above a top edge of the external wrapper. A lower edge region of the upper material overlaps and is preferably affixed to the upper edge region of an outside surface of the wrapper locator. This construction allows an upper edge of the external wrapper to abut a lower edge of the upper material, resulting in no or a minimal ridge and a clean, attractive appearance.

DESCRIPTION OF THE DRAWINGS

The invention will be more fully understood from the following detailed description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a side view of a shoe in accordance with the present invention;

Fig. 2 is a cross-sectional view taken along line A-A of Fig. 1;

Fig. 3 is a cross-sectional view taken along line B-B of Fig. 1;

Fig. 4 is a cross-sectional view taken along line C-C of Fig. 1;

Fig. 5 is a partial isometric view of the upper material and wrapper locator of the shoe of Fig. 1;

Fig. 6 is a side view of a further embodiment of a shoe in accordance with the present invention;

Fig. 7 is a side view of a completed shoe construction of the shoe of Fig. 6;

ATTORNEY DOCKET NO. EBWS-00XXX
BRINKMEYER, SCHURGIN,
GAGNEBIN & HAYES LLP
TEL. (617) 367-7700
FAX. (617) 451-0313

Fig. 8 is a side view of a still further embodiment of a shoe in accordance with the present invention;

Fig. 9 is a cross-sectional view of the shoe of Fig. 8 on a last;

Fig. 10 is an exploded view of a prior art shoe;

Fig. 11 is a side view of a shoe illustrating one problem in wrapping a midsole of a shoe; and

Fig. 12 is a side view of a shoe illustrating another problem in wrapping a midsole of a shoe.

DETAILED DESCRIPTION OF THE INVENTION

For some shoe designs, it is desirable to cover the midsole with an attractive material rather than leave the midsole exposed. In prior art shoes, however, the midsole is not typically covered with the upper material, as this would entail wrapping the upper material around and under the midsole and, in the heel area, the upper material would wrinkle and look unattractive. See Fig. 11. Alternatively, if the midsole were to be covered with another material that wraps around the midsole, that material would extend upwardly along the side of the upper for a distance and would leave a large ridge along its upper edge. Such a ridge would be likely to catch and tear while the shoe was being worn. See Fig. 12. The present shoe overcomes these problems.

Referring to Figs. 1-5, a shoe according to the present invention includes a midsole 12 overlying an outsole 14. A Strobel board 16 overlies the midsole. The midsole is typically formed of a lightweight, supporting or cushioning material, such as E.V.A. or polyurethane.

An external wrapper 18 covers the midsole 12 along at least a portion of the shoe's perimeter, such as along the heel region 20 and the toe region 22 in the embodiment shown. A lower region 24 of the external wrapper 18 is sandwiched between the midsole 12 and the outsole 14. Many materials are suitable for the external wrapper, such as plantation crepe, rubber, urethane, or thermoplastic rubber. The external wrapper is discussed further below.

The shoe of the present invention also includes an upper assembly 26 including an upper material 28 that forms the external upper surface of the shoe. The upper material may be formed of any suitable material, such as leather, suede, canvas, or various synthetics. It will also be appreciated that the upper material may also be formed from two or more layers of suitable materials affixed together. The total thickness of the upper material typically ranges from 2.0 to 2.2 mm, although it can range up to 3.0 mm. The upper assembly 26 also includes a lining 30 that is affixed to the upper material in any suitable manner, such as by spot cementing with a suitable adhesive, as is known in the art. The lining 30 is fastened to the Strobel board 16 by Strobel stitching 32, as is known in the art. The lining may be formed of any suitable material, such as leather or synthetics as known in the art.

The shoe includes a wrapper locator 34 that abuts and runs along a lower edge portion 36 of the outer surface of the lining 30 along the portion of the shoe's perimeter corresponding to the external wrapper 18. The

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WEINGARTEN, SCHURGIN,
GAGNEBIN & HAYES LLP
TEL. (617) 542-2290
FAX. (617) 451-0313

wrapper locator 34 is affixed to the outer surface of the lining 30 in any suitable manner, such as with any suitable adhesive appropriate for the materials used, as would be known in the art. The wrapper locator is preferably as thin as possible, generally about 0.5 mm. The wrapper locator is made from a fabric such as canvas or other flexible sheet material that accepts adhesive bonding.

A lower edge region 38 of the upper material 28 overlaps an upper edge region 40 of the outside surface of the wrapper locator 34. The joint between the upper material 28 and the wrapper locator 34 may be fastened in any suitable manner, such as by stitching or with adhesive appropriate for the materials used, as would be known in the art. See Fig. 5. The contacting surface of the upper material 28 may be suitably skived prior to application of the adhesive if necessary, as would be known in the art. Suitable adhesives used in the construction of the shoe may include, for example, a heat-activated urethane cement or a rubber based cement, depending on the materials to be joined.

An upper portion 42 of the external wrapper 18 extends over the wrapper locator 34 and is fastened to the wrapper locator with a suitable adhesive appropriate for the materials used, as would be known in the art. An upper edge 44 of the external wrapper 18 abuts against the lower edge 46 of the upper material 28. The external wrapper 18 typically has a thickness ranging from 2.0 to 3.0 mm, which is generally equal to or only slightly greater than the thickness of the upper material 28. In

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WEINGARTEN, SCHURGIN,
GAGNEBIN & HAYES LLP
Tel. (617) 542-2290
Fax. (617) 451-0313

this way, the upper edge 44 of the external wrapper 18 does not form a large protruding ridge where it abuts the upper material 28. The external wrapper may be formed of a variety of flexible sheet materials, such as crepe, rubber, polyurethane, or thermoplastic rubber, as would be known in the art. As can be seen in Figs. 1 and 8, the external wrapper of the completed shoe is flush with the upper, providing a desirable appearance, while adhering strongly to the material underneath.

In the embodiment shown in Figs. 1-4, the external wrapper and consequently the wrapper locator are provided along the heel portion and the toe portion of the shoe. It will be appreciated that the external wrapper and wrapper locator may be provided along any desired portion of the shoe, such as the heel region only, the toe region only, or the entire perimeter of the shoe. Figs. 6-8 illustrate shoe constructions in which the wrapper locator and wrapper extend around the entire perimeter of the shoe.

In the embodiment of Figs. 1-6, in which the wrapper locator 34 does not extend over the midsole 12, the midsole is cemented to the shoe using standard lasted construction. The wrapper 18 then placed against the wrapper locator, butted against the lower edge 46 of the upper material 28, and wrapped around the midsole. The outsole is then cemented on. Fig. 7 illustrates the resulting construction of the shoe of Fig. 6.

Figs. 8 and 9 illustrate a further embodiment in which the midsole 12 is attached to the shoe using standard lasted construction on a last 52. A wrapper

locator 34' and the wrapper 18 are then both wrapped over the midsole 12, and the outsole 14 is cemented on. The resulting finished construction has the same outward appearance as in Fig. 7. The choice in manufacturing methods is primarily dependent on factory preference. The method of Figs. 8 and 9 is generally simpler, but uses slightly more material for the wrapper locator 34'.

The invention is not to be limited by what has been particularly shown and described, except as indicated by the appended claims.

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